West Virginia Department of Environmental Protection
Division of Air Quality

Fact Sheet

For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-05300001-2009**
Plant Identification Number: **05300001**
Permittee: **Appalachian Power Company (d.b.a. American Electric Power)**
Facility Name: **Philip Sporn Plant**
Mailing Address: **1 Riverside Plaza, Columbus, OH 43215**

Physical Location:	New Haven, Mason County, West Virginia
UTM Coordinates:	420.01 km Easting • 4313.31 km Northing • Zone 17
Directions:	Directly off U.S. Route 33.

Facility Description

The Philip Sporn Plant is an electric generation facility with a total output of 1050 MW and operates under Standard Industrial Classification (SIC) code 4911. The facility consists of five (5) boilers and various supporting operations such as coal handling, ash handling, and various tanks with insignificant emissions. Units 1, 2, 3, and 4 are 1311 mmBtu/hr boilers which discharge through a common stack (CS014) and Unit 5 is a 3961 mmBtu/hr boiler which discharges through a separate main stack (SP51). The boilers typically consume coal and fuel oil. The boiler design may allow the boilers to accommodate non-hazardous materials which include, but are not limited to demineralizer resin, chemical cleaning liquids, carbonaceous filter media, and other materials with the coal and fuel oil. The facility has the potential to operate seven (7) days per week, twenty-four (24) hours per day and fifty-two (52) weeks per year.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]

Criteria Pollutants	Potential Emissions	2007 Actual Emissions
Carbon Monoxide (CO)	3,477.3	529.8
Nitrogen Oxides (NO_X)	34,634	9,335.2
Lead (Pb)	2.72	0.09
Particulate Matter ($PM_{2.5}$)[1]	631.3	
Particulate Matter (PM_{10})[1]	1452.6	
Total Particulate Matter (TSP)	2,346	577.9
Sulfur Dioxide (SO_2)	129,017	40,724.6
Volatile Organic Compounds (VOC)	417.3	63.1

PM_{10} is a component of TSP.

Hazardous Air Pollutants (HAPs)	Potential Emissions	2007 Actual Emissions
Hydrogen Chloride	9,227.5	2050
Hydrogen Flouride	801.3	130
Selenium	36.2	3.2
Manganese	2.8	0.3
Nickel	1.3	0.34
Arsenic	4.20	0.09
Mercury Compounds	1.4	0.13
Beryllium	10.0	0.006
Chromium	1.50	0.29
Cobalt	0.5	0.16

Some of the above HAPs may be counted as PM or VOCs.

Coal is a non-homogeneous material and the concentrations of metals or other trace materials in the coal can vary from shipment to shipment. The Sporn Plant does not have source specific information for the trace elements requested for the potential to emit inventory. The information utilized in this inventory was derived using a statistical evaluation of the data within the Electric Power Research Institute (EPRI) Power Plant Integrated System: Chemical Emissions Study (PISCES) database for eastern bituminous coal. The database consists of over 100 coal samples for most parameters. The coal associated with units that do not have flue gas desulfurization was chosen for the statistical analysis. AEP has utilized the value corresponding to a two-sigma value that would account for over 90% of all coals that may be used at the Sporn Plant.

To allow future flexibility of fuel sources, AEP is providing the potential to emit inventory that estimates the maximum potential of the unit. The potential to emit inventory is much greater than that of the last years actual emissions reported in accordance with Regulation 30. The differences are the coal quality used in the calculation and the ability of the unit to operate at maximum generating capacity for 8760 hours.

Title V Program Applicability Basis

This facility has the potential to 173,588 tons per year of SO_2, 43,397 tons per year NO_X, 2,346 tons per year PM, 3,477 tons per year CO, 417 tons per year VOC, and 10,086.72 tons per year HAPs. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, over 10 tons per year of a single HAP, and over 25 tons per year of aggregate HAPs, the Philip Sporn Plant is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

	45CSR2	Control of particulate matter emissions.
	45CSR6	Open burning prohibited.
	45CSR10	Control of sulfur dioxide emissions.
	45CSR11	Standby plans for emergency episodes.
	45CSR13	Permits for Construction, Modification, Relocation and Operation of Stationary Sources.
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Operating permit requirement.
	45CSR33	Acid Rain Provisions and Permits
	45CSR38	Determination of Compliance With Air Quality Management Rules
	40 C.F.R. 61	Asbestos inspection and removal
	40 C.F.R. 64	Compliance Assurance Monitoring
	40 C.F.R. 72	Permits Regulation
	40 C.F.R. 73	Sulfur Dioxide Allowance System Permits Regulation
	40 C.F.R. 74	Sulfur dioxide Opt-ins
	40 C.F.R. 75	Continuous Emissions Monitoring
	40 C.F.R. 76	Nitrogen Oxides Reduction Program
	40 C.F.R. 77	Excess Emissions
	40 C.F.R. 78	Appeals Procedure for Acid Rain Program
	40 C.F.R. 82, Subpart F	Ozone Depleting Substances
State Only:	45CSR4	No objectionable odors.
	45CSR37	Mercury Budget Trading Program
	45CSR39	NOx Annual Trading Program
	45CSR40	NOx Ozone Season Trading Program
	45CSR41	SO_2 Trading Program
	WVDAQ Letter dated September 3, 2002 – Thermal decomposition of boiler cleaning solutions.	

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the draft Title V permit as such.

The Secretary can request any pertinent information such as annual emission inventory reporting as provided in WV Code § 22-5-4 (a) (14).

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit *(if any)*
Acid Rain Permit R33-3938-2012-3	12/18/2007	Effective January 1, 2008 Until December 31, 2012
Phase II NOx Compliance Plan	12/19/2006	
CAIR Permit Application	04/28/2008	
CO-R37-C-2008-4	04/07/2008	

Determinations and Justifications

The original Title V permit condition 3.1.11, as seen below, was removed from the proposed renewal permit. As a result of EPA subsequently promulgating the 40 CFR 63, Subpart ZZZZ regulation this permit condition was determined to be outdated and no longer necessary. In order to preserve the original permit numbering sequence permit condition 3.1.11 was reserved.

3.1.11. **MACT 112(j) Hammer Application.** This facility is subject to the provisions of 40 CFR 63 Subpart ZZZZ – "National Emissions Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines," proposed by US EPA on December 19, 2002. If US EPA has not promulgated this standard or not taken other applicable action by February 28, 2004, then the Part 2 112(j) equivalent emission limitation permit application under Title V of the 1990 CAAA shall be submitted by April 28, 2004.
[45CSR34, 45CSR§§30-12.1., 12.3., and 12.4.]

The permittee identified that the source has two fire pumps on site, which utilize two 300 Hp diesel engines. These engines are considered existing emergency use RICE sources and are therefore exempt from any 40 C.F.R. 63, Subpart ZZZZ requirements in accordance with 40 C.F.R. §63.6590(b)(3).

45CSR33 – *Acid Rain Provisions and Permits*
40 CFR 72, 73, 74, 75, 76, 77 & 78 - Permits Regulation, Sulfur Dioxide Allowance System Permits Regulation, Sulfur Dioxide Opt-ins, Continuous Emissions Monitoring, Nitrogen Oxides Reduction Program, Excess Emissions, & Appeals Procedure for Acid Rain Program. Philip Sporn Units 1, 2, 3, 4, and 5 (referred to as Units 11, 21, 31, 41, and 51 in the Phase II Acid Rain Permit are affected units under 45CSR33 as defined by 40 CFR § 72.6, and as such must meet the requirements of 40 CFR §§ 72, 73, 74, 75, 76, 77 and 78.

The most recent Phase II Acid Rain permit R33-3938-2012-3 was issued on December 18, 2007. This permit, along with the application, Phase II NOx Compliance Plan, and Phase II NOx Averaging Plan, are included in the permit as Appendix B.

45CSR37 – *Mercury Budget Trading Program to Reduce Mercury Emissions*
Compliance Order # CO-R37-C-2008-4
In response to the federal Clean Air Mercury Rule (CAMR), West Virginia enacted 45CSR37, which became effective on May 1, 2006 (after the initial Title V was issued).

On February 8, 2008, the federal CAMR rule was vacated, and on March 24, 2008, U.S. EPA appealed the decision. The federal CAMR rule is still subject to pending litigation and 45CSR37, although not vacated by the court, is intrinsically tied to the provisions of the federal CAMR program; therefore, the Compliance Order CO-R37-C-2008-4 holds certain permitting requirements in abeyance pending resolution of ongoing CAMR litigation or until other final action is taken. Details concerning 45CSR37 and the CAMR permit condition are set forth in the Director's April 7, 2008 cover letter to Mr. John M. McManus with the compliance order, which is included with the permit as Appendix F.

An explanatory note has been placed at the end of the CAMR permit condition indicating that certain requirements are held in abeyance. This language is identical to that written in the draft Title V permit renewal for the Mitchell Plant (DAQ ID# 051-00005), which was requested by the permittee in their pre-draft comments concerning that facility.

CAIR Rules 45CSR39, 45CSR40, and 45CSR41 (State-enforceable only)
On December 23, 2008, the U.S. Court of Appeals for the D.C. Circuit decided to remand to EPA without vacature the Clean Air Interstate Rule (CAIR). As such, these conditions (3.1.14. through 3.1.16.) have been added to the permit renewal. The CAIR application is also added to the permit (Appendix E).

The CAIR rules 45CSR39 and 45CSR40 effectively provide a budget trading program for the control and reduction of the pollutant NOx emitted from affected sources. Historically, this pollutant has been regulated under rules 45CSR1 (NOx Budget Trading program for non-EGUs) and 45CSR26 (NOx Budget Trading program for EGUs). Since the CAIR rules are providing the NOx regulation, rules 45CSR1 and 45CSR26 are no longer necessary and will be repealed effective May 1, 2009.

40 C.F.R. Part 64 – *Compliance Assurance Monitoring*
The permittee submitted a CAM plan in the renewal application for Units 1, 2, 3, 4, and 5 to assure compliance with the 45CSR§2-4.1.a. PM mass limitation, which is 460 lb/hr aggregated from the two emission points. Units 1, 2, 3, 4, and 5 are all pollutant-specific emission units (PSEUs) for the purposes of CAM, and particulate matter is the affected pollutant. The PM emissions of Unit 1 through 5 are controlled by electrostatic precipitators (ESPs). These control devices have 100% capture efficiency, and provide 99.8% design control efficiency for particulate matter. Furthermore, the potential pre-control emissions of PM from each PSEU are greater than the major source threshold for PM. Thus, all PSEUs meet all three CAM applicability criteria given under 40 C.F.R. §§64.2(a)(1)-(3). Table 1 below summarizes the CAM plan.

Table 1 – CAM Plan Summary for *Units 1* & *2* PM Emissions Controlled by *ESPs 1* & *2*

Elements of the CAM Plan	Indicator No. 1 of 2
I. GENERAL CRITERIA	Opacity
Monitoring Approach	Opacity is continuously measured and recorded by a certified opacity monitoring system.
Indicator Range	The indicator range is zero to 10% opacity, and will be verified by testing. Monitoring shall be implemented within 180 days of issuance of this renewal permit. Continuously measured opacity values are reduced to six-minute block averages. These 6-minute averages are averaged into 3-hour block average opacity values. An excursion is defined as two consecutive 3-hour block averages greater than 10%. Excursions trigger an inspection, evaluation, and corrective action. Excursions are also included in the recordkeeping, and reporting requirements.
QIP threshold	If five (5) percent or greater of the 3-hour average COMS opacity

Elements of the CAM Plan	Indicator No. 1 of 2
	values indicate excursions during a calendar quarter, the permittee must develop a QIP.
II. PERFORMANCE CRITERIA Specifications for obtaining representative data	The location of the opacity monitors is in accordance with 40 C.F.R. 60, Appendix B, Performance Specification 1 (PS-1). The COMS was installed in accordance with PS-1. Therefore, the employed COMS must be used to comply with CAM (see §64.3(d)(1)), and §§64.3(a) and (b) are automatically satisfied when COMS is used (see §64.3(d)(2)(ii)).
Verification of Operational Status	The COMS is not *new or modified monitoring equipment*; therefore, verification of operational status pursuant to §64.3(b)(2) is not applicable.
QA/QC Practices and Criteria	The COMS was installed and evaluated in accordance with PS-1. Zero and span drift are checked daily, and filter audits are performed in accordance with PS-1. §64.3(b)(3) is automatically satisfied when COMS is used, according to §64.3(d)(2)(ii). Refer to condition 4.2.2.
Monitoring frequency	The monitoring frequency is continuous. §64.3(b)(4) is automatically satisfied when COMS is used, according to §64.3(d)(2)(ii).
Data Collection Procedure	The data are collected by a computerized data acquisition and handling system (DAHS). This system collects and retains all relevant opacity data. §64.3(b)(4) is automatically satisfied when COMS is used, according to §64.3(d)(2)(ii).
Averaging Period	The averaging period is on a six-minute block basis. These 6-minute averages are averaged into 3-hour block average opacity values. §64.3(b)(4) is automatically satisfied when COMS is used, according to §64.3(d)(2)(ii).

40 C.F.R. Part 64 is not applicable to any monitoring for the following pollutants emitted by PSEUs Unit 1 through 5:

Carbon monoxide
Units 1-5 are not subject to CAM for carbon monoxide (CO) because the units are not subject to an emission limitation or standard for CO (cf. 40 C.F.R. §64.2(a)(1)). Additionally, the units do not use a control device to control CO emissions (cf. 40 C.F.R. §64.2(a)(2)).

Oxides of Nitrogen
Units 1-5 are not subject to CAM for oxides of nitrogen (NOx) because such emissions from the units are subject to emission standards that apply solely under an emissions trading program that has been approved by the Administrator for NOx (cf. 40 C.F.R. §64.2(b)(1)(iv)).

Sulfur Dioxide
Units 1-5 are not subject to CAM for sulfur dioxide (SO2) because the units are subject to emission standards prescribed by an Acid Rain Program pursuant to sections 404, 405, 406, 407(a), 407(b), or 410 of the Act (cf. 40 C.F.R. §64.2(b)(1)(iii)).

Volatile Organic Compounds
Units 1-5 are not subject to CAM for volatile organic compounds (VOC) because the units are not subject to an emission limitation or standard for VOC (cf. 40 C.F.R. §64.2(a)(1)). Additionally, the units do not use a control device to control VOC emissions (cf. 40 C.F.R. §64.2(a)(2)).

Hazardous Air Pollutants
Units 1-5 are not subject to CAM for hazardous air pollutants (HAPs) because the units are not subject to an emission limitation or standard for HAPs (cf. 40 C.F.R. §64.2(a)(1)).

Other general CAM requirements are set forth in permit subsections 4.2., 4.3., 4.4., and 4.5.

Non-Applicability Determinations
The following requirements have been determined not to be applicable to the subject facility due to the following:

a. **45CSR1 – *NO_x Budget Trading Program As A Means Of Control And Reduction Of Nitrogen Oxides From Non-Electric Generating Units.*** The Philip Sporn Plant does not have any fossil fuel-fired "Non-Electric Generating Units" as defined in 45CSR§1-4.1.b. Furthermore, this rule will be repealed as of May 1, 2009.

b. **45CSR5 – *To Prevent And Control Air Pollution From The Operation Of Coal Preparation Plants, Coal Handling Operations And Coal Refuse Disposal Areas.*** The Philip Sporn Plant is subject to the requirements of 45CSR2 and is therefore exempt from the provisions of 45CSR5 as outlined in 45CSR§§5-2.4.b. and 2.14.

c. **45CSR17 – *To Prevent And Control Particulate Matter Air Pollution From Materials Handling, Preparation, Storage And Other Sources Of Fugitive Particulate Matter***. The Philip Sporn Plant is subject to the fugitive particulate matter emission requirements of 45CSR2 and is therefore exempt from the provisions of 45CSR17 as outlined in 45CSR§17-6.1.

d. **40 C.F.R. 60 Subpart D –*Standards of Performance for Fossil-Fuel-Fired Steam Generators for which Construction is Commenced After August 17, 1971.*** Philip Sporn's steam generators commenced construction prior to 1971.

e. **40 C.F.R. 60 Subpart Da – *Standards of Performance for Electric Utility Steam Generating Units for which Construction is Commenced After September 18, 1978***. Philip Sporn Plant's steam generators commenced construction prior to September 18, 1978.

f. **40 C.F.R. 60 Subpart K – *Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior May 18, 1978***. The facility does not include storage vessels that are used to store petroleum liquids (as defined in 40 C.F.R. §60.111(b)) and that have a storage capacity greater than 40,000 gallons for which construction, reconstruction or modification was commenced after June 11, 1973 and prior to May 19, 1978.

g. **40 C.F.R. 60 Subpart Ka – *Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After May 18, 1978 and Prior to July 23,1984.*** The facility does not include storage vessels that are used to store petroleum liquids (as defined in 40 C.F.R. §60.111a(b)) and that have a storage capacity greater than 40,000 gallons for which construction, reconstruction or modification was commenced after May 18, 1978 and prior to July 23, 1984.

h. **40 C.F.R. 60 Subpart Kb – *Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced after July 23,1984.*** Storage vessels potentially affected by this rule are exempted because they contain liquids with a maximum true vapor pressure of less than 3.5 kPa, have a storage capacity of less than 75 cubic meters, or have not commenced construction, reconstruction or modification after July 23, 1984.

i. **40 C.F.R. 60 Subpart Y – *Standards of Performance for Coal Preparation Plants***. The coal handling equipment potentially affected by this rule has not been constructed or modified after October 24, 1974.

j. **40 C.F.R. 63 Subpart Q – *National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers***. The facility does not include industrial process cooling towers that have operated with chromium-based water treatment chemicals on or after September 8, 1994.

k. **40 C.F.R. 63 Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines.*** The facility's two emergency fire pump engines were determined to not be subject to the requirements of this rule in accordance with 40 C.F.R. §63.6590(b)(3).

l. **45CSR7 – *To Prevent and Control Particulate Matter Air Pollution from Manufacturing Processes and Associated Operations***. Since the facility is subject to 45CSR2, 45CSR§7-10.1. provides an exemption from 45CSR7.

Request for Variances or Alternatives

None

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: 03/27/09
Ending Date: 04/27/09

All written comments should be addressed to the following individual and office:

Jesse Hanshaw, PE
Title V Permit Writer
West Virginia Department of Environmental Protection
Division of Air Quality
7012 MacCorkle Avenue, SE
Charleston, WV 25304-2943

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Point of Contact

Jesse Hanshaw, P.E.
West Virginia Department of Environmental Protection
Division of Air Quality
7012 MacCorkle Avenue, SE
Charleston, WV 25304-2943
Phone: 304/926-3727 • Fax: 304/926-3739

Response to Comments (Statement of Basis)

On April 24, 2009 American Electric Power submitted comments to address six minor issues, which relate to clarifications or typographical corrections. Each of the suggested changes were incorporated as requested by the company. As a result, the following changes were made:

1. Within Emission Unit Table 1:
   The writer added entries for two urea tanks that were installed in 2008. These 35,000 gallon urea tanks, #31 and #32, were added to the end of the table under the Miscellaneous Other section as requested for completeness even though the writer could not identify any applicable requirements related to these tanks .

2. In the last paragraph of condition 3.1.13 the following highlighted text was added in order to provide additional clarification as well as remain consistent with other more recent AEP permits:

   The DAQ Director concluded in Compliance Order #CO-R37-C-2008-4 that the only 45CSR37 requirement applicable after the Federal CAMR program was vacated was to obtain a HG budget permit, which is contained in Section 21 of the rule. Refer to Compliance Order # CO-R37-C-2008-4 (Appendix E), which holds the requirements of 45CSR37, Section 21, in abeyance pending resolution of the ongoing CAMR litigation or final action is taken by the State to revoke this order or to repeal, revise, or replace 45CSR37.

3. Within condition 4.2.4.c of the draft permit the word "of" was stricken from the fourth sentence. This change was accommodated as requested since it was the result of a typographical error.

4. As requested by the Company, for consistency within condition 4.2.9 the section subparts were changed from "(1)" and "(2)" to "a" and "b".

5. It was brought to the permit writers attention that under condition 4.3.1 the July 2007 testing, which was referenced in the proposed permit, was no longer the most recent compliance demonstration. Therefore, as requested, the writer included the February 2009 test results within the summary. The results of the 2009 testing were confirmed to be accurate within a 4/8/2009 emission test report approval summary submitted to the file by Richard Fenton of WV DAQ.

6. As requested by the Company, under condition 4.1.2, a clarification was added by inserting the word "three" within the following condition:

   4.1.2. Particulate matter emissions from the stacks (CS014, SP51) shall not exceed 460.25 lb/hr. The averaging time shall be the arithmetic average of three complete sampling runs consisting of a minimum total sampling time of two (2) hours per run.
   [45CSR§2-4.1.a., 45CSR2-Appendix §§ 4.1.b. & 4.1.c.]

This concludes the Company's comments. There were no additional comments received from the public or EPA regarding the issuance of this permit.